IN THE CLAIMS

Claim 1 (Canceled).

2. (Currently amended) The fluid flow regulator according to claim 20, wherein the body comprises first and second seats, the first fluid flow path passes ~~though~~ through the first seat when the head sealingly engages the second seat in the first configuration of the valve, and the second fluid flow path passes through the second seat when the head sealingly engages the first seat in the second configuration of the valve.

3. (Original) The fluid flow regulator according to claim 2, wherein the first seat is disposed in the chamber and defines a first aperture with a first area, and the second seat is disposed in the chamber and defines a second aperture with a second area.

4. (Original) The fluid flow regulator according to claim 3, wherein the first and second seats are centered about an axis, and the first seat is spaced along the axis with respect to the second seat.

5. (Original) The fluid flow regulator according to claim 4, wherein the valve moves along the axis and the head is disposed along the axis between the first and second seats.

6. (Original) The fluid flow regulator according to claim 4, wherein the valve comprises a stem that is fixed to the head and projects through the body.

7. (Original) The fluid flow regulator according to claim 6, further comprising:
an actuator operably coupled to the stem, the actuator moves the head and stem between the first and second configurations of the valve.

8. (Original) The fluid flow regulator according to claim 7, wherein the actuator comprises an electromagnetic actuator mounted on the body.

9. (Original) The fluid flow regulator according to claim 7, wherein the actuator comprises a resilient element biasing the stem toward the first configuration of the valve.

10. (Original) The fluid flow regulator according to claim 4, wherein the head reciprocates along the axis between the first and second configurations of the valve.

11. (Original) A fluid flow regulator according to claim 10, wherein the head comprises:
a first portion disposed at an axial end of the valve;
a second portion disposed along the axis between the first portion and the stem; and
a central portion disposed along the axis between the first and second portions.

12. (Original) The fluid flow regulator according to claim 11, wherein the central portion has a cross-section area transverse to the axis, and the cross-section area is greater than the first area of the first aperture of the first seat and is greater than the second area of the second aperture of the second seat.

13. (Original) The fluid flow regulator according to claim 11, wherein the central portion has a diameter that is greater than a diameter of the first aperture and greater than a diameter of the second aperture.

14. (Original) The fluid flow regulator according to claim 13, wherein the first portion tapers along the axis to a minimum first portion diameter that is less than the diameter of the first aperture, and the second portion tapers along the axis to a minimum second portion diameter that is less than the diameter of the second aperture.

15. (Original) The fluid flow regulator according to claim 14, wherein a diameter of the stem is no greater than the minimum second portion diameter.

Claim 16 (Canceled).

17. (Previously presented) The fluid flow regulator according to claim 20, wherein movement of the valve among the plurality of intermediate configurations is infinitely variable.

Claims 18 and 19 (Canceled).

20. (Previously presented) A fluid flow controller for a turbocharger on an internal combustion engine, the turbocharger boosting density of atmospheric air being supplied to the internal combustion engine, and a wastegate setting a maximum boost level, the fluid flow controller comprising:

a body defining a chamber, the body including:

an inlet port providing fluid communication between the turbocharger and the chamber;

a first outlet port providing fluid communication between the chamber and the wastegate, a first fluid flow path passing air from the turbocharger through the inlet port, through the chamber and out the first outlet port to the wastegate; and

a second outlet port providing fluid communication between the chamber and the atmosphere, a second fluid flow path passing air from the turbocharger through the inlet port, through the chamber and out the second outlet port to the atmosphere;

a valve including a stem and a head disposed in the chamber, the valve being movable with respect to the body between a first configuration, a second configuration, and a plurality of intermediate configurations:

the first configuration substantially occluding the second fluid flow path and permitting generally unrestricted fluid flow along the first fluid flow path;

the second configuration substantially occluding the first fluid flow path and permitting generally unrestricted fluid flow along the second fluid flow path; and

the plurality of intermediate configurations permitting proportional fluid flow along the first and second fluid flow paths.

21. (Original) The fluid flow controller according to claim 20, wherein the body comprises first and second seats, the first seat defines a first aperture having a first seat diameter, the second seat defines a second aperture having a second seat diameter, the first fluid flow path passes though the first aperture in the first configuration of the valve, and the second fluid flow path passes through the second aperture in the second configuration of the valve.

22. (Previously presented) The fluid flow controller according to claim 20, wherein the valve reciprocates along an axis with respect to the body, the valve comprises:

a first portion disposed at an axial end of the valve;

a second portion disposed along the axis between the first portion and the stem; and

a central portion disposed along the axis between the first and second portions.

23. (Previously presented) The fluid flow controller according to claim 22, wherein the central portion has a diameter that is greater than the first seat diameter and greater than the second seat diameter, the first portion tapers along the axis to a minimum first portion diameter that is less than the first seat diameter, and the second portion tapers along the axis to a minimum second portion diameter that is less than the second seat diameter.

24. (Previously presented) The fluid flow controller according to claim 20, further comprising:

an electromagnetic actuator mounted on the body, the electromagnetic actuator reciprocating the valve along an axis between the first and second configurations of the valve; and

a resilient element biasing the valve toward the first configuration of the valve.

25. (Previously presented) A system of boosting atmospheric air density being supplied to an internal combustion engine, the internal combustion engine including an intake manifold providing the air to a combustion cylinder and including an exhaust manifold providing combustion products from the combustion cylinder, the system comprising:

a turbocharger including a turbine and a compressor connected for rotation with the turbine, the turbine being in fluid communication with the exhaust manifold, and the compressor being in fluid communication with the intake manifold;

a wastegate including a regulating portion and a control portion, the regulating portion being in fluid communication between the compressor and the atmosphere, and the control portion being operatively coupled to the regulating portion and receiving a fluid control signal; and

a fluid flow controller supplying the fluid control signal to the wastegate, the fluid flow controller including:

a body defining a chamber, the body including:

an inlet port providing fluid communication between the turbocharger and the chamber;

a first outlet port providing fluid communication between the chamber and the wastegate, a first fluid flow path passing air from the turbocharger through the inlet port, through the chamber and out the first outlet port to the wastegate; and

a second outlet port providing fluid communication between the chamber and the atmosphere, a second fluid flow path passing air from the turbocharger through the inlet port, through the chamber and out the second outlet port to the atmosphere; and

a valve including a head disposed in the chamber, the valve being movable with respect to the body between a first configuration, a second configuration, and a plurality of intermediate configurations, wherein:

the first configuration substantially occludes the second fluid flow path and permits generally unrestricted fluid flow along the first fluid flow path;

the second configuration substantially occludes the first fluid flow path and permits generally unrestricted fluid flow along the second fluid flow path; and

the plurality of intermediate configurations permit proportional fluid flow along the first and second fluid flow paths.

26. (Previously presented) The system according to claim 25, wherein the fluid flow controller comprises an electromagnetic actuator mounted on the body, the electromagnetic actuator reciprocates the valve along an axis between the first and second configurations of the valve.

27. (Previously presented) The system according to claim 26, further comprising:

an electronic control unit electrically coupled to the electromagnetic actuator, the electronic control unit supplying to the electromagnetic actuator an electric control signal.

28. (Previously presented) A method of controlling a wastegate for a turbocharger on an internal combustion engine, the turbocharger boosting the density of atmospheric air supplied to the internal combustion engine, and the wastegate setting a maximum boost level of the turbocharger, the method comprising:

supplying air from the turbocharger to a fluid flow controller;

sending a control signal from the fluid flow controller to the wastegate, the sending including providing a first portion of the air supplied from the turbocharger to the fluid flow controller;

discharging to the atmosphere a second portion of the air supplied from the turbocharger to the fluid flow controller; and

proportioning the first and second portions of the air.

29. (Previously presented) The method according to claim 28, wherein the proportioning comprises adjusting the fluid flow controller between a first configuration, a second configuration, and a plurality of intermediate configurations, the first configuration substantially eliminating the first portion of the air, the second configuration substantially eliminating the second portion of the air, and the plurality of intermediate configurations varying relative proportions of the first and second portions.

30. (Previously presented) The method according to claim 29, wherein the proportioning comprises infinitely variably varying the relative proportions of the first and second portions.